

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated August 1, 2003 (U.S. Patent Office Paper No. 5). In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1, 2 and 4 are amended to correct formal errors and to more particularly point out and distinctly claim the subject invention. Claim 5 stands withdrawn from consideration in this application. In addition, new claims 6 to 13 are hereby submitted for consideration.

Additional Amendments

The specification and abstract are being amended to correct formal errors and to better disclose and describe the features of the present invention as claimed. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Karger *et al.* U.S. Patent No. 5,085,757 (further, the '757 patent) in view of Tsuruta, JP Application No. 01025866 (further, the '866 application). Applicants respectfully traverse the rejection.

Amended claim 1 recites a method for removing a predetermined region of a coating of a polymer-coated glass capillary tube, comprising the steps of raising a temperature in a reaction chamber in which the predetermined region of the polymer-coated glass capillary tube is arranged and reacting the predetermined region of the glass capillary tube with a reactive gas containing O₃ gas introduced into the reaction chamber.

The Examiner alleges that the '757 patent teaches that it is necessary to remove the polymeric coating from the surface of electrophoresis capillary tubes, but this reference does not teach removing the polymer by heating in the presence of ozone. Further, the Examiner alleges that the '866 application teaches removing organic material from a surface by heating the organic material in the presence of ozone. The Examiner concludes that it would have

been obvious to one skilled in the art to remove the polymer coating from the surface of electrophoresis capillary tubes by heating the tubes in an ozone environment because Tsuruta teaches that this is an effective means to remove organic material from the surface of a workpiece. Applicants respectfully disagree.

The '757 patent teaches, in the Abstract section, an integrated control/alignment system for use with a high performance capillary electrophoretic apparatus. Further, in col. 8, lines 5 to 10, the '757 patent describes that the polyamide coating is selectively removed at opposed locations on the capillary column 12, at the predetermined positions, to create windows. The device used for removing the polyamide coating is described in a co-pending application Serial No. 07/342,989 (presently, U.S. Patent No. 4,940,883, cited by Applicants in the Information Disclosure Statement). Applicants respectfully submit that neither the '757 patent nor the '989 application discloses, teaches or suggests the feature of claim 1 "raising a temperature in a reaction chamber in which the predetermined region of the polymer-coated glass capillary tube is arranged and reacting the predetermined region of the glass capillary tube with a reactive gas containing O₃ gas introduced into the reaction chamber." Moreover, no disclosure is made in either reference about the "reactive gas O₃ introduced" into a "reaction chamber".

The '866 application teaches, on page 441, upper-left column, lines 1 to 12, decomposing and removing oils and fats, organic solvents, foreign matter, dust and fine powder from the surface of a specimen made of plastic, glass, metal or ceramic, using ultraviolet rays and ozone. The '866 application does not disclose, teach or suggest the feature of claim 1 "raising a temperature in a reaction chamber in which the predetermined region of the polymer-coated glass capillary tube is arranged and reacting the predetermined region of the glass capillary tube with a reactive gas containing O₃ gas introduced into the reaction chamber" nor the fact that the coating to be removed is from "a polymer-coated glass capillary tube".

The '757 patent discloses that a polyamide coating is selectively removed and the '866 application discloses that a surface is processed using ultraviolet rays and ozone. However, no reference on its own or in combination with other cited references discloses, teaches or suggests all the features of claim 1. Therefore, Applicants respectfully submit that the references either singly or in combination fail to disclose, teach or suggest all the features of claim 1. Therefore, Applicants respectfully ask the Examiner to withdraw the rejection regarding claim 1.

Claims 3 and 4 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Claims 3 and 4 depend from and add features to allowable claim 1. Therefore, they are allowable for at least the same reasons discussed above in connection with claim 1 and for reasons contained therein.

Applicants thank the Examiner for allowing claim 2. Applicants have amended claim 2 eliminating the step of "discharging a product resulting from the reaction chamber". Claim 2 in its amended form still recites "a method for removing predetermined regions of coatings of a plurality of polymer-coated glass capillary tubes, comprising the steps of: raising a temperature in a reaction chamber, where the predetermined regions of the plurality of polymer-coated glass capillary tubes are arranged to form a plane and where the outer surfaces of the capillary tubes partially make gaps of 0.1 mm to 10 mm with the inner wall of the reaction chamber and reacting the predetermined regions of the glass capillary tubes with a reactive gas containing O₃ gas introduced into the reaction chamber" which Applicants understand the Examiner found to be allowable.

Applicants hereby propose new claims 6 to 13. Support for the recitation of claim 6 to 13 can be found in the Specification on page 6, line 12 to the last line, same page, page 7, line 13, to page 8, line 8, page 9, lines 13 to 24, on page 15, line 9 to page 16, line 16, and on page 17, line 17 to page 18, line 7. Examination on the merits for the newly introduced claims is respectfully requested.

Conclusion

In view of all the above, Applicants respectfully submit that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

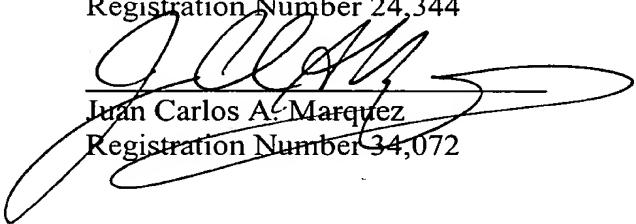
Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to

contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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